

REMARKS

The present application was finally rejected on June 13, 2005. In view of the following remarks, Applicant respectfully requests that this rejection be withdrawn and all pending claims be allowed.

As a preliminary matter, Applicant respectfully submits that the final rejection of at least claim 6 was premature. See Request to Withdraw Premature Final Rejection, filed June 24, 2005. In particular, the Office Action erroneously states that "Applicant's amendments necessitated the new ground(s) of rejection presented in this Office Action." This conclusion directly conflicts with MPEP § 706.07(a). Claim 6 as presented in the previous amendment is substantively identical to the originally filed claim 6. Since the scope of the claim did not change, the amendment could not necessitate a new grounds of rejection.

It is therefore respectfully requested that the final rejection be withdrawn. In view of the following remarks, it is respectfully submitted that the final rejection should be replaced with a notice of allowance. But if the claims are still rejected, a non-final rejection should be provided.

All pending claims have been rejected under either 35 U.S.C. § 102 or 35 U.S.C. § 103 as being unpatentable in view of Smith et al. (U.S. Patent No. 5,944,537, hereinafter "Smith"). Applicant respectfully traverses this rejection.

Independent claim 6 specifically recites "a probe needle for testing semiconductor chips, the probe needle comprising an elongated member [and] a contact tip." Applicant respectfully submits that Smith does not teach or suggest a probe needle, as required by claim 6.

Smith does not disclose a probe needle but rather a connection (spring) for eliminating the need to create uniform solder bumps or uniform contacting pressure as known from chip-on-substrate packages. As shown in Fig. 12 of Smith, the spring contact 15 is fixed on the bond pad

3 of the substrate 14 or the device 101. That means that the spring contact is a member of the DUT (device under test) and not a member of the prober. Therefore it is not a probe needle but a feature for contact alleviation between an outer probe needle and a bond pad or between the bond pad and a bond pad of another device.

Claim 6 also specifically recites "an adhesive layer of titanium arranged beneath the titanium nitride layer so that the adhesive layer is between the surface of the contact tip and the titanium nitride layer." Applicant respectfully submits that Smith et al. does not teach or suggest an adhesive layer of titanium arranged beneath a titanium nitride layer.

As noted in the Office Action, Smith does teach an adhesive layer of titanium. See Col. 10, lines 19-25 (which were cited in the Office Action). A reading of this section, however, indicates that Smith teaches an adherence layer to provide good bonding between gold and the adherence layer. Col. 10, lines 17-24. Smith goes on to say that "titanium is preferred because it can be etched with high selectivity to the gold and the spring contact 15 by plasma etching with fluorine atoms," Col. 10, lines 25-26. Smith never teaches or suggests using an adhesive layer of titanium arranged beneath the titanium nitride layer, as required by claim 6. In fact, there is no indication the titanium can be etched with a high selectivity to titanium nitride, which is the desired characteristic taught by Smith.

Therefore, it is respectfully submitted that claim 6 is allowable over the references of record.

Claims 2-4 depend from claim 6 and add further limitations. It is respectfully submitted that these dependent claims are allowable by reason of depending from an allowable claim as well as for adding new limitations.

Claim 10, as previously presented, specifically recites a method for manufacturing a probe needle for testing semiconductor chips including "coating at least in the area of the contact tip with a titanium layer prior to the coating with titanium nitride." As discussed above with respect to claim 6, Smith does not teach or suggest coating a contact tip for a probe needle much less coating a contact tip with titanium and then coating the tip with titanium nitride. Therefore, it is respectfully submitted that claim 10 is allowable over the references of record.

Claims 11-15 depend from claim 10 and add further limitations. It is respectfully submitted that these dependent claims are allowable by reason of depending from an allowable claim as well as for adding new limitations.

Claim 18, specifically recites contacting a test probe to at least one of the pads, "wherein the test probe includes a contact tip that is coated with a layer of titanium and a layer of titanium nitride overlying the layer of titanium." As discussed above with respect to claims 6 and 10, Smith does not teach or suggest a test probe with a contact tip that is coated with a layer of titanium and a layer of titanium nitride overlying the layer of titanium. Further claim 18, specifically recites performing an electrical test by applying a test signal to the semiconductor wafer through the test probe. As discussed above, Smith does not teach or suggest a test probe that can be used to contact pads of a semiconductor wafer. Therefore, it is respectfully submitted that claim 18 is allowable over the references of record.

Claims 19-20 depend from claim 18 and add further limitations. It is respectfully submitted that these dependent claims are allowable by reason of depending from an allowable claim as well as for adding new limitations.

Should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone Ira S. Matsil, Applicant's attorney, at 972-732-1001 so

that such issues may be resolved as expeditiously as possible. No fee is believed due in connection with this filing. However, should one be deemed due, the Commissioner is hereby authorized to charge Deposit Account No. 50-1065.

Respectfully submitted,



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Date

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